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## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

16 DEC 2004

Applicant's or agent's file reference N.84449B SMW	FOR FURTHER ACTION		See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/EP 03/06553	International filing date (day/month/year) 20.06.2003	Priority date (day/month/year) 19.06.2002	
International Patent Classification (IPC) or both national classification and IPC C12N1/00			
Applicant DSM IP ASSETS B.V. et al.			

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.

This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

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3. This report contains indications relating to the following items:

- I  Basis of the opinion
- II  Priority
- III  Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV  Lack of unity of invention
- V  Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI  Certain documents cited
- VII  Certain defects in the international application
- VIII  Certain observations on the International application

Date of submission of the demand 19.01.2004	Date of completion of this report 09.07.2004
Name and mailing address of the international preliminary examining authority:   European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer  Heirbaut, M Telephone No. +49 89 2399-8642

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/EP 03/06553

**I. Basis of the report**

1. With regard to the elements of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, Pages**

1-22 as originally filed

**Claims, Numbers**

1-10 as originally filed

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- the language of publication of the international application (under Rule 48.3(b)).
- the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- contained in the international application in written form.
- filed together with the international application in computer readable form.
- furnished subsequently to this Authority in written form.
- furnished subsequently to this Authority in computer readable form.
- The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- the description, pages:
- the claims, Nos.:
- the drawings, sheets:

5.  This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. **PCT/EP 03/06553**

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Yes: Claims	1,3
	No: Claims	2, 4-10
Inventive step (IS)	Yes: Claims	1,3
	No: Claims	2,4-10
Industrial applicability (IA)	Yes: Claims	1-10
	No: Claims	

**2. Citations and explanations**

**see separate sheet**

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/EP 03/06553

V

- 1 Reference is made to the following prior art documents (D) cited in the international search report:

D1: WO-A-9 737 032  
D2: EP-A-0 986 960  
D3: US-B1-6 255 505  
D4: EP-A-0 522 470  
D5: EP-A-1 178 103

- 2 The subject-matter of present independent claim 1 and 3 (process) meets the requirements of novelty (Article 33(2) PCT).

None of the prior art documents cited in the international search report teaches the subject-matter having the combination of features indicated in said claim, in particular the rapid heating and cooling steps resulting in an area below the time versus temperature graph below 13 000 °C.minute.

- 3 The subject-matter of present independent claim 2 (process) does not meet the requirements of novelty (Article 33(2) PCT) in the light of any of the prior art documents D1-D5, which teach the combination of features indicated in said claim.

Particular reference is made to the passages of said prior art document/s and the combination of features taught therein as indicated in the search report.

It is stressed that every pasteurisation process comprises a heating, plateau and cooling step.

- 4 The subject-matter of present independent claim 4 (process) does not meet the requirements of novelty (Article 33(2) PCT) in the light of any of the prior art documents D1-D4, which teach the combination of features indicated in said claim.

Particular reference is made to the passages of said prior art documents and the combination of features as indicated in the search report.

- 5 The subject-matter of present independent claim 9 (oil) does not meet the requirements of novelty (Article 33(2) PCT) in the light of any of the prior art documents D1-D5, which teach the combination of features indicated in said claim.

Particular reference is made to the passages of said prior art documents and the combination of features as indicated in the search report.

- 6 The subject-matter of present independent claims 1 and 3 (process) meets the requirements of inventive step (Article 33(3) PCT).

Document D1, which is considered to represent the closest prior art, teaches the preparation of microbial PUFA containing oil with a triglyceride content of greater than 90% and low peroxide and anisidine value from pasteurised biomass, with 55 to 65 minutes and 63 to 68°C as preferred pasteurisation conditions (see in particular claim 1; page 15 lines 6-33 of D1).

The subject-matter of present independent claims 1 and 3 differs from the teaching of document D1 in the rapid heating and cooling steps resulting in an area below the time versus temperature graph below 13 000 °C.minute.

The technical problem facing the skilled person at the priority date of the present application was to provide a process for the preparation of microbial oils comprising PUFA with improved oxidative stability and reduced energy expenditure for the pasteurisation step (see page 2 paragraph 4 and examples in the present description).

The solution of said technical problem, ie through the selection of rapid heating and cooling steps resulting in an area below the time versus temperature graph below 13 000 °C.minute, is not obvious with regard to document D1 or the other prior art documents cited in the search report.